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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.  | CONFIRMATION NO. |
|--|-------------|----------------------|----------------------|------------------|
| 09/540,361   | 03/31/2000  | Rajeev Koodli        | NC17353              | 2371             |
| 7590   | 01/18/2005  |                      | EXAMINER             |                  |
| Robert C Rolnik<br>Nokia Inc<br>6000 Connection Drive 14-755<br>Irving, TX 75039 |             |                      | JAGANNATHAN, MELANIE |                  |
|  |             |                      | ART UNIT             | PAPER NUMBER     |
|  |             |                      | 2666                 |                  |

DATE MAILED: 01/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 09/540,361             | KOODLI, RAJEEV      |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Melanie Jagannathan    | 2666                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 24 September 2004.

2a) This action is FINAL.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-23 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1,12 and 23 is/are rejected.

7) Claim(s) 2-11 and 13-22 is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

|   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | Paper No(s)/Mail Date: _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 23 is rejected under 35 U.S.C. 102(e) as being anticipated by Lin et al. US 6,463,068.

Lin et al. discloses use of WRED processor to determine which packets are to be retained in buffer for output, utilizing a modified WRED scheme with minimum and maximum thresholds associated with the classes of service per output queues. See column 4, lines 39-67 and column 5.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skirmont US 6,252,848 in view of Bechtolsheim et al. US 6,515,963.

Regarding claims 1 and 12, the claimed sending rate estimate is disclosed by ingress flow rate. The claimed probabilistically marking a packet to one of a plurality of priority levels based on sending rate estimate is disclosed by packets marked with a marking based on criteria including ingress flow rate measurements and flow profiles. See column 4, lines 7-59.

Skirmont discloses all of the limitations of the claims except for determining any credits or debits for the packet stream. Bechtolsheim et al. discloses credit field in flow table for each indexed flow table entry so a flow over its dynamic buffer limit incurring a drop probability could send some amount of packets to exhausts credits. Credits are incremented on enqueueing and decremented on marking or dropping. See column 10, lines 1-35. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to modify Skirmont with credits of Bechtolsheim et al. One of ordinary skill in the art would be motivated to do this for a credit scheme ensures fair allocations of bandwidth. See column 10, lines 47-49.

*Allowable Subject Matter*

5. Claims 2-11, 13-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record does not disclose if determining if the sending rate is less than a first rate threshold and in response setting a probability of marking packet to a one of a plurality of priority levels, does not disclose if sending rate is between a first and second rate threshold, marking a packet such that a rate of packets marked a subordinate priority level is no greater than 1-(FRT/s), does not disclose if sending rate is greater than second rate threshold, marking a packet such that the rate of packets marked a second priority level is

(SRT – FRT)/s and rate of packets marked a lowest priority is at least (s- SRT)/s, does not disclose if sending rate is greater than the rate threshold, determining if a burst size is greater than a minimum burst and in response that burst size is greater than minimum burst marking the packet a first priority level.

***Response to Arguments***

6. Applicant's arguments filed 9/24/2004 have been fully considered but they are not persuasive.

Applicant argues Skirmont fails to disclose or suggest determining credits or debits for packet stream. Examiner agrees and submits reference Bechtolsheim et al.

Applicant argues the weighted average of Lin et al. is not computed based on the maximum and minimum threshold values so it does not suggest first, second probabilities and weighting each probability to contribute to a net probability. Examiner contends in WRED packet drop probability is based on maximum and minimum thresholds and a mark probability denominator. The rate of packet drop increases linearly as the average queue size increases until it reaches the maximum threshold and the mark probability denominator is the fraction of packets dropped when the average queue depth is at maximum threshold. Examiner contends this teaches claim language of claim 23 involving weighting probabilities to result in net probability of marking a packet.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie Jagannathan whose telephone number is 571-272-3163. The examiner can normally be reached Monday-Friday 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-3163.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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AU 2666

MJ



FRANK DUONG  
PRIMARY EXAMINER